

## Abstract

An object of the present invention is to attain greater improvement of response characteristic in a temperature sensor having a thermistor element held in a metal tube.

5       The invention provides a temperature sensor (1) including a cylindrical metal tube (3) having a front end side blocked, a thermistor element (2), and a sheath member (8) connected to the thermistor element (2) and held in the inside of the metal tube (3), wherein: the metal tube (3) has a small-diameter  
10   portion (33) located on the front end side and entirely having an inner diameter smaller than the outer diameter of the sheath member (8), and a large-diameter portion (36) located on the rear end side of the small-diameter portion (33) and having a diameter larger than the outer diameter of the small-diameter  
15   portion (33); and a thermistor sintered body (21) is held in the small-diameter portion (33) and cement (10) is filled in between a front end of the thermistor sintered body (21) and a front end of an inner wall of the metal tube (3) and on the front end side viewed from a rear end surface of the thermistor  
20   sintered body (21).